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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CAI, WAYNE HUU

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/619,829	Applicant(s) TRACHEWSKY, JASON A.	
	Examiner WAYNE CAI	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-26 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-26 and 35-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 15-26 have been considered but are moot in view of the new ground(s) of rejection. Furthermore, claims 35-38 are newly added; therefore, please refer to detailed rejections below.
2. With regard to claims 22-26, the rejection under 35 U.S.C. 112, second paragraph is now withdrawn as the Applicant has amended claims to correct issues raised in previous Office Action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15, 16, 18-23, 25, 26, and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of Agrawal et al. (hereinafter "Agrawal", US 2003/0108005).

Regarding claim 15, Monin teaches or suggests a Wireless Local Area Network (WLAN) device (fig. 5 and fig. 6, control unit 28), comprising:

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a first baseband processor interface for receiving, processing and generating digital data (fig. 5 and/or fig. 6, baseband module 1. The baseband module 1 implicitly teaches a baseband processor interface because the baseband processor must be able to connect, interact or communicate with many other components. For example, in this case, the baseband module 1 is connected and communicated with radio module 1. Furthermore, paragraph 0005 also teaches or suggests that this invention is related to “digital data”);

a first radio for receiving the digital data and for transmitting RF signals in a first frequency band and for receiving RF signals in the first frequency band and for producing corresponding digital data to the first baseband processor interface (fig. 5 and/or fig. 6, radio module 1 is connected to the baseband module 1);

a second baseband processor interface for receiving, processing and generating digital data (fig. 5 and fig. 6, baseband module 2 is connected to radio module 2); and

a second radio for receiving the digital data and for transmitting RF signals in a second frequency band and for receiving RF signals in the second frequency band and for producing corresponding digital data to the second baseband processor interface (fig. 5 and fig. 6, radio module 2 is connected to baseband module 2). The Examiner further notes that Monin specifically teaches or suggests the WLAN as described operating at 2.4 GHz frequency, but can also be implemented using other WLAN technologies including at different frequency

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bands, etc. Hence, this teaching reads on using either first frequency or second frequency.

Monin, however, does not expressly teach or suggest a single baseband processor that transmits outgoing data and receives ingoing data through the first and second baseband processor interfaces.

In a similar endeavor, Agrawal teaches or suggests frequency hop collision avoidance in a multi-channel Bluetooth-enabled packet transmission system. Agrawal also teaches or suggests a single baseband processor (i.e., fig. 1, a single baseband controller 17) that transmits outgoing data and receives ingoing data through the first and second baseband processor interfaces (i.e., the single baseband controller 17 connects to the plurality of radio modules 14, 15, 16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Agrawal to include a single baseband processor that transmits outgoing data and receives ingoing data through the first and second baseband processor interfaces, in order to enable the plural channels to be activated for simultaneous transmission.

Regarding claim 22, Monin teaches or suggests a Wireless Local Area Network (WLAN) device, comprising:

a first radio for receiving the digital data and for transmitting RF signals in a first frequency band and for receiving RF signals in the first frequency band

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and for producing corresponding digital data to the at least baseband processor interface (fig. 5 and fig. 6, radio module 1);

a second radio for receiving the digital data and for transmitting RF signals in a first frequency band and for receiving RF signals in the first frequency band and for producing corresponding digital data to the at least baseband processor interface (fig. 5 and fig. 6, radio module 2);

first and second baseband processor interfaces operably coupled to first and second radios (fig. 5, and fig. 6 illustrates the first baseband module 1 and baseband module 2 couple to the first and second radios, respectively. Hence, these baseband modules implicitly include first and second baseband processor interfaces because each of the baseband module must be able to communicate with all other components);

wherein the first and second radio interfaces are operably coupled to communicate with the first and second baseband processor interfaces (fig. 5 and/or fig. 6 illustrate baseband module 1 and radio module 1 is connected to each other. Similarly, baseband module 2 is connected to radio module 2. Thus, they implicitly include these interfaces to make them to be compatible and be able to communicate with each other);

wherein the baseband processor generates digital data for transmission from one of the first radio, the second radio or both wherein the baseband processor produces the digital data through one of the first radio interface, the second radio interface or both for transmission (i.e., the baseband module is connected and communicated with the radio module);

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wherein the baseband processor, the first and second radios, the first and second baseband processor interfaces, first and second radio interface are all a part of a single WLAN device (all the components as recited in this limitation is located within one device. That is, control unit 28. See fig. 5 and fig. 6). The Examiner further notes that Monin specifically teaches or suggests the WLAN as described operating at 2.4 GHz frequency. This means that the device is operating at one frequency which is the first frequency as recited in claim.

Monin, however, does not expressly teach or suggest a single baseband processor for receiving, processing and generating digital data.

In a similar endeavor, Agrawal teaches or suggests frequency hop collision avoidance in a multi-channel Bluetooth-enabled packet transmission system. Agrawal also teaches or suggests a single baseband processor (i.e., fig. 1, a single baseband controller 17) for receiving, processing and generating digital data (i.e., the single baseband controller 17 connects to the plurality of radio modules 14, 15, 16 that is capable of receiving, processing and generating digital data. See paragraph 0005 for the teachings of digital data).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Agrawal to include a single baseband processor for receiving, processing and generating digital data, in order to enable the plural channels to be activated for simultaneous transmission.

Regarding claim 35, Monin teaches or suggests a method for a Wireless Local Area Network (WLAN) device, comprising:

receiving, a first radio, digital data and transmitting RF signals in a first frequency band and receiving RF signals in the first frequency band and producing corresponding digital data to a baseband processor (fig. 5 or fig. 6, baseband module 1 and radio module 1 is connected to each other);

receiving, in a second radio, the digital data transmitting RF signals in a first frequency band and receiving RF signals in the first frequency band and producing corresponding digital data to the single baseband processor (fig. 5 or fig. 6, baseband module 2 and radio module 2 is connected to each other).

Monin, however, does not expressly teach or suggest generating, from the single baseband processor, the digital data for transmission from one of the first radio, the second radio or both wherein the single baseband processor produces the digital data through one of a first radio interface, a second radio interface or both for transmission.

In a similar endeavor, Agrawal teaches or suggests frequency hop collision avoidance in a multi-channel Bluetooth-enabled packet transmission system. Agrawal also teaches or suggests generating, from the single baseband processor (i.e., baseband controller 17), the data for transmission from one of the first radio, the second radio or both wherein the single baseband processor produces the data through one of a first radio interface, a second radio interface or both for transmission (i.e., radio modules 14-15 and radio interfaces 11-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Agrawal to generating, from the single baseband processor, the digital data for transmission from one of the first radio, the second radio or both wherein the single baseband processor produces the digital data through one of a first radio interface, a second radio interface or both for transmission, in order to enable the plural channels to be activated for simultaneous transmission.

Regarding claims 16, 23, and 36, Monin and Agrawal teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for determining a quality indicator, wherein the quality indicator for a selected channel considers a channel power and interference power for the selected channel (paragraphs 0066, 0068).

Regarding claims 18, 25, and 37, Monin and Agrawal teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for selecting a communication protocol for operation from a plurality of available communication protocols (paragraph 0071).

Regarding claims 19, 26, and 38, Monin and Agrawal teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for selecting at least two frequency bands and communicating

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over at least one channel in each of the two frequency bands (paragraphs 0005, 0014 and 0071 describe using two different bands 2.4 GHz and 5 GHz).

Regarding claim 20, Monin and Agrawal teach or suggest all limitations recited within claims as described above. Monin teaches or suggests the first and second radio interfaces and first and second baseband processors wherein the first baseband processor communicates with the first baseband processor interface by way of the first radio interface and the second baseband processor communicates with the second baseband processor interface by way of the second radio interface (fig. 5 illustrates baseband module 1 is connected to radio module 1 and baseband module 2 is connected to radio module 2).

Regarding claim 21, Monin and Agrawal teach or suggest all limitations recited within claims as described above. Agrawal teaches or suggests including first and second radio interfaces wherein the first baseband processor communicates with the first baseband processor interface by way of the first radio interface and with the second baseband processor interface by way of the second radio interface (i.e., the single baseband processor communicates with plurality of radio modules as illustrated in fig. 1).

5. Claims 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of

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Agrawal et al. (hereinafter "Agrawal", US 2003/0108005) as applied to claims 15, 16, 22, and 23 above, and further in view of Brandstetter (US 5,005,946).

Regarding claims 17 and 24, Monin and Agrawal teach or suggest all limitations recited within claims as described above, but do not expressly teach or suggest wherein the interference power includes in-channel interference and adjacent channel interference.

In a similar endeavor, Brandstetter teaches or suggests a method for multi-channel filtering system. Brandstetter also teaches or suggests wherein the interference power includes in-channel interference and adjacent channel interference (col. 8, line 67 – col. 9, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin and Agrawal's teachings and include the interference power includes in-channel interference and adjacent channel.

The motivation/suggestion for doing so would have been to optimize the operation.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Bilgic et al. (US 2003/0033522) describes and/or illustrates in figure 2 a single baseband processor is connected to a plurality of radio modules.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Cai/
Examiner, Art Unit 2617